

## **REMARKS**

Claims 80, 81, 83-92, 94-96, 104-106, and 108-112 are pending in the instant application. Claim 112 has been amended to delete sequences that were not elected in response to the restriction requirement mailed March 19, 2004. Claims 80, 87, 91, 95, and 96 have been amended to uniformly recite "HSP" for "heat shock protein." Claim 110 has been amended to depend from claim 109. New claim 113 recites the same subject matter as previous claim 108, which is canceled by this amendment. New claims 114-117 have been added to more clearly point out what Applicants regard as the invention. Support for new claims 114-117 is at page 13, lines 17-20. Claims 85-87 and 89-92 were withdrawn from consideration by the Examiner as belonging to non-elected species. Claim 80 is generic to claims 85-87 and 89-92. Applicants respectfully request that the Examiner consider claims 85-87 and 89-92 at such time as the generic linking claim, claim 80, is deemed allowable. Accordingly, claims 80, 81, 83-92, 94-96, 104-106, and 109-117 will be pending upon entry of this Amendment.

Applicants note that the claim listed as claim "88" in the Listing of Claims submitted with Applicants' response mailed January 5, 2005 inadvertently recited the body of claim 107, which was canceled. Claim 88 should have recited the method of claim 80, "wherein the test compound is a small molecule." The correct language of claim 88 can be found in the Listing of Claims submitted with Applicants' amendment mailed December 5, 2003 and in the Listing of Claims hereinabove.

### **1. CLAIM OBJECTIONS**

The Examiner objected to claim 80 for the recitation of the term "test compound." The Examiner stated that the claim reads generically on compounds that are non-elected inventions and required that the claim be amended to recited the elected invention only, namely a "small molecule" test compound.

In response, Applicants maintain that the Examiner's requirement is an unwarranted denial of the claim scope to which Applicants are entitled. The election of a small molecule should be deemed a species election, with claims 80, 81, 83, 84, 94-96, 104-106, and 109-117 generic claims readable on the elected species (as well as specific claim 88). To do otherwise is unfairly denying Applicants the ability to pursue claims of a scope wherein the test molecule is any test molecule other than a small molecule, since the Examiner has not denoted any restriction group of this breadth. The statutory basis for

restriction practice arises from 35 U.S.C. § 121 which states “[i]f two or more independent and distinct inventions are claimed in one application, the Director may require the application to be restricted to one of the inventions.” An application may properly be required to be restricted to one of two or more claimed inventions only if: (1) they are able to support separate patents and they are either independent or distinct; and (2) search and examination of the entire application involves a serious burden. See MPEP § 803.

Applicants submit that a proper search of the claimed invention need not take into account the structure of the test compound since it is the assay components of (i) a ligand binding fragment of an  $\alpha$ 2M receptor and a purified HSP, or a binding fragment thereof, or a purified HSP peptide complex; and (ii) measuring the level of HSP binding activity, HSP uptake activity, or HSP-mediated antigen representation activity, that are sufficient to render the assay novel and nonobvious, irrespective of the structure of the test compound. Thus, it would not be a serious burden on the Examiner to do a proper search, with a small molecule test compound as a species election.

The Examiner also objected to claim 112 as reading on non-elected subject matter to the extent that it recites sequences other than SEQ ID NO:21. In response, Applicants have amended claim 112 to read only on SEQ ID NO:21.

**2. THE REJECTION UNDER 35 U.S.C. § 112, FIRST PARAGRAPH, FOR LACK OF WRITTEN DESCRIPTION SHOULD BE WITHDRAWN**

The Examiner rejected claims 80, 81, 83, 84, 88, 94-96, and 104-112 under 35 U.S.C. § 112, first paragraph, as allegedly containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the art that the inventors, at the time the application was filed, had possession of the claimed invention. In particular, the Examiner asserted that the specification lacks adequate written description support for the term “small molecule” because the specification does not provide a particular small molecule that is identified by performing the claimed method. The Examiner further stated, relying on *Univ. of Rochester v. G.D. Searle & Co.*, 358 F.3d 916 (Fed. Cir. 2004), that absent such disclosure of a particular small molecule, the invention is incomplete because it provides merely a starting point for further discovery or a research plan.

In response, Applicants respectfully traverse the Examiner’s rejection and maintain that the written description requirement of 35 U.S.C. § 112, first paragraph, is satisfied with respect to the claimed screening assay methods directed to identifying a test compound, including a small molecule test compound, that modulates an HSP- $\alpha$ 2M receptor-

mediated process.

Specifically, Applicants maintain that the rejection of the claimed assay methods for failure to provide an example of a test compound that was identified using the claimed methods is improper and that the Examiner's reliance on *Rochester* to support this rejection is misplaced for the following reasons.

An example of a test compound that has been identified using the claimed methods is not necessary to satisfy the written description requirement because possession of such a compound is not necessary in order to know that Applicants were in possession of the claimed *screening assay methods*. This is because the particular structure of the test compound used in the claimed assay methods is not an essential feature of the claimed methods, which can be applied to any test compound. With respect to the test compound, all that is necessary to practice the presently claimed methods is a large variety of such compounds for use in the assay. Applicants maintain their position, stated in their January 5, 2005 response, that a large variety of test compounds, including small molecule test compounds, for use in the claimed assay methods was commonly known and readily available in the art, as demonstrated, for example, by the commercially available libraries of small molecules described in Applicants' specification at page 36, line 33, to page 37, line 13.

The written description requirement of 35 U.S.C. §112 does not require Applicants to recite in their specification examples of test compounds, including small molecules, that were already well known in the art. See *e.g.*, *Capon v. Eshhar*, No. 03-1480 (Fed. Cir. August 12, 2005). It follows that Applicants' specification need not describe particular examples of small molecule test compounds for use in the claimed screening assay methods because such compounds were well known and readily available to the skilled artisan.

With respect to the Examiner's reliance on *Univ. of Rochester v. G.D. Searle & Co.* to support this rejection, Applicants submit that the present claims directed to *screening assay methods* are not analogous to the claims at issue in *Rochester*. The claims at issue in *Rochester* were directed to a method for selectively inhibiting the activity of a cyclooxygenase by administering a selective inhibitor of that cyclooxygenase. *Rochester* at 918. The court found that the practice of the claimed method requires the possession of an inhibitor of cyclooxygenase. The claims were held invalid for lack of written description because the specification did not provide any such inhibitors or any specific teaching as to the structural features of such inhibitors. *Id.* at 927-928. In contrast, the practice of the presently

claimed screening assay methods does not require that one already be in possession of a test compound that possesses the activity which is detected by the assay. Nor is any prior knowledge of the structure of the test compound required to practice the method. It is precisely to identify compounds having such activity that the method is practiced.

Importantly, the court in *Rochester* recognized that the specification at issue in that case did support claims to assay methods. *Id.* at 928 (stating that “[t]he only claims that appear to be supported by the specification are claims to assay methods”). Applicants submit that the presently claimed assay methods are likewise adequately supported by the instant specification without the need to provide a specific example of a test compound that has been identified by the claimed assay.

In summary, Applicants maintain that one skilled in the art would recognize that the Applicants were in possession of small molecules that can be used as test compounds in the claimed methods for identifying compounds that modulate an HSP- $\alpha$ 2MR-mediated process and respectfully request that the Examiner withdraw his rejections under 35 U.S.C. § 112, first paragraph, for lack of written description.

### **3. THE REJECTION UNDER 35 U.S.C. § 112, FIRST PARAGRAPH, FOR LACK OF ENABLEMENT SHOULD BE WITHDRAWN**

The Examiner rejected claims 80, 81, 83, 84, 88, 94-96, and 104-112 under 35 U.S.C. § 112, first paragraph, as allegedly containing subject matter not described in the specification in such a way as to enable one skilled in the relevant art to make and/or use the claimed invention. In particular, the Examiner stated that the specification fails to provide an example of the claimed method or specific guidance as to how to find a small molecule test agent to be used in the method.

In response, Applicants respectfully traverse the Examiner’s rejection because, contrary to the Examiner’s assertion, the specification provides numerous examples of the claimed screening assays as well as guidance with respect to how to obtain test compounds, including small molecule test compounds, for use in the claimed assays.

The test for enablement is whether the skilled artisan can make or use the claimed invention based on Applicants’ disclosure combined with the knowledge in the prior art without under experimentation. *In re Wands*, 858 F.2d 731, 737 (Fed. Cir. 1988). The specification need not contain a working example if the invention is otherwise disclosed in such a manner that one skilled in the art will be able to practice it without undue experimentation. M.P.E.P. 2164.02 (citing *In re Borkowski*, 422 F.2d 904, 908 (Fed. Cir. 1970)). Moreover, “a patent need not teach, and preferably omits, what is well known in the

art.” *Hybritech v. Monoclonal Antibodies*, 802 F.2d 1367, 1384 (Fed. Cir. 1986)(citing *Lindemann Maschinenfabrik v. American Hoist and Derrick*, 730 F.2d 1452,1463 (Fed. Cir. 1984)).

Applicants submit that the claimed screening assays can be practiced by one of skill in the art without undue experimentation based on Applicants’ disclosure and the knowledge in the art with respect to test compounds, *e.g.*, small molecules, that can be used in the claimed assays. The specification at page 28, lines 14-36, to page 32, line 15, provides examples of binding assays that can be used to detect compounds that modulate an HSP- $\alpha$ 2MR-mediated process, *e.g.*, direct binding assays, competitive binding assays, and affinity assays which may be carried out in a number of ways including, *inter alia*, the use of  $\alpha$ 2MR bound to a solid support,  $\alpha$ 2MR expressed on the surface of intact cells or isolated cell membranes, or in solution. The specification at page 32, lines 18-36, to page 34, line 28, further provides examples of activity assays that can be used to detect compounds that modulate an HSP- $\alpha$ 2MR-mediated process, including, *inter alia*, chemotaxis assays, assays for cytokine release, and calcium release assays. Such assays were commonly known in the art and relevant references are also cited in the specification, *e.g.*, at page 32, lines 27-30; page 33, lines 1-2; page 33, lines 18-19; page 34, lines 3-4. The specification also provides working examples of an affinity assay and a cytokine release assay, *e.g.*, in the Example beginning at page 70.

With respect to small molecule test compounds for use in the claimed screening assays, the specification provides guidance at page 36, lines 33-36, to page 37, line 2, which describes a number of sources of commercially available libraries of small molecule test compounds.

In support of the rejection for lack of enablement, the Examiner again relied on *Rochester* and stated that the claims at issue in *Rochester* were analogous to the presently claimed invention. However, as noted above, the presently claimed invention is directed to screening assay methods, while the claims at issue in *Rochester* were directed to methods for inhibiting a cyclooxygenase by administering an inhibitor of cyclooxygenase. In order to practice the method of the claims at issue in *Rochester*, it was necessary for the specification to provide an inhibitor of cyclooxygenase. In contrast, it is not necessary for the subject specification to provide specific examples of small molecule test compounds in order for one of skill to practice the claimed screening assay methods. This is because such compounds were well-known and commercially available in the art at the time the invention was made and further because there is no requirement that a small molecule test compound have a

particular structure in order to be used in the claimed methods. As noted above, the court in *Rochester* distinguished claims directed to methods of inhibiting a cyclooxygenase from claims directed to methods of screening for such inhibitors, which had issued in an earlier patent based on the same disclosure. See *Rochester* at 927-28.

In summary, Applicants submit that one of skill in the art could practice the claimed screening assay methods without undue experimentation and respectfully request that the Examiner withdraw his rejection under 35 U.S.C. §112, first paragraph, for lack of enablement.

### **CONCLUSION**

Entry of the foregoing amendment and remarks into the record of the above-identified application is respectfully requested. Applicants submit that the remarks and amendments made herein now place the claims in condition for allowance. If any issues remain in connection herewith, the Examiner is respectfully invited to telephone the undersigned to discuss the same.

Respectfully submitted,

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